

Serial No. 10/771,636

Attorney Docket No. 01-548

LISTING OF CLAIMS:

1. (Currently amended) An electrostatic actuator comprising:

a laminate substrate including a thin film silicon layer formed on a silicon substrate through a buried insulating film;

a movable structure constructed with the thin film silicon layer, wherein the movable structure includes a torsion beam and a movable side comb-tooth electrode;

a fixed side comb-tooth electrode disposed to face the movable side comb-tooth electrode, wherein the fixed side comb-tooth electrode is formed in an inside of a through hole bored through the laminate substrate, wherein

a potential difference is generated between the electrodes for swinging the movable ~~structure~~structure;

a mirror surface provided on the movable structure;

the movable side comb-tooth electrode is provided at the torsion beam of the movable structure;

the movable side comb-tooth electrode and the fixed side comb-tooth electrode form a first pair, wherein the electrostatic actuator further comprises a movable side comb-tooth electrode and a fixed side comb-tooth electrode, which form a second pair;

the first and second pairs are disposed on opposite sides of the torsion beam; and

a thickness of the fixed side comb-tooth electrode is greater than that of the movable structure.

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2. (Original) An electrostatic actuator according to claim 1, wherein the fixed side comb-tooth electrode is made of metal or polysilicon.

3. (Original) An electrostatic actuator according to claim 1, wherein three or more pairs of movable side and fixed side comb-tooth electrodes are provided.

4. (Canceled)

5. (Original) An electrostatic actuator according to claim 1, wherein teeth provided side by side in the movable side comb-tooth electrode and the torsion beam of the movable structure are provided to extend in a same direction, and lengths of the teeth provided side by side in the movable side comb-tooth electrode are half or more of a length of the torsion beam.

6. (Original) An electrostatic actuator according to claim 1, wherein teeth provided side by side in the fixed side comb-tooth electrode formed in the inside of the through hole are different from each other in center positions in a vertical direction.

7. (Currently amended) An electrostatic actuator according to ~~any one of claims 1-claim 1,~~ wherein when the movable structure is forcibly swung by the potential difference generated between the movable side comb-tooth electrode and the fixed side comb-tooth electrode such that reflected light of a laser beam intermittently irradiated to the movable structure is emitted can be emitted in a specified angle range in accordance with a swing of the movable structure,

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~~the and the~~ movable structure is ~~forcibly~~ swung in synchronization with an intermittent irradiation period of the laser beam ~~by the potential difference generated between the movable side comb-tooth electrode and the fixed side comb-tooth electrode.~~

8. (Currently amended) An electrostatic actuator according to ~~any one of claims 1-claim 1,~~ claim 1, further comprising:

a capacity measurement fixed electrode provided on a support substrate disposed under the laminate substrate; and

a capacity measurement movable electrode provided at the movable structure, facing the capacity measurement fixed electrode, and performing displacement in a direction of approaching and moving away from the capacity measurement fixed electrode in accordance with the swing of the movable structure, wherein while capacity between the capacity measurement fixed electrode and the capacity measurement movable electrode is measured to obtain a swing angle of the movable structure, the potential difference generated between the movable side comb-tooth electrode and the fixed side comb-tooth electrode is controlled to obtain a desired swing angle of the movable structure or to perform a swing operation.

9. (Original) An electrostatic actuator according to claim 1, wherein the movable structure is swung so that reflected light of a laser beam irradiated to the movable structure is directed toward a distance measurement object at a specified place in an image taken by a camera.

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10. (Canceled)

11. (Canceled)